

Run The Good Race



Cancer Prevention
and Control in Missouri

Missouri Department of Health

Dear Neighbors:

I know that the word “cancer” evokes disturbing images and feelings of alarm. Indeed, second only to cardiovascular disease, cancer is a leading cause of death for Missourians. Each year, 28,000 new cases are diagnosed in Missouri and 13,000 lives are claimed by cancer.

The devastating effect that cancer can have on patients and their circle of family and friends impacts all of us. Quality of life may be diminished and additional burdens may be imposed. These burdens may include anxiety and other emotional stress; financial hardship to underinsured families; increased medical costs and insurance premiums; lost productivity to employers and local economies; and potential loss of another member’s contribution to society. Indeed, each family that has been touched by cancer has been impacted by burdens of this nature.

However, cancer need not be so formidable. Cancer is not one big disease but includes hundreds of diseases that represent uncontrolled growth of abnormal cells. Some types of cancer, such as cervical cancer, can be prevented through early detection and successful screening programs. Recent advances in science and medicine mean that many more types of cancer can be successfully treated, particularly if detected early.

Through information, education, and assuring access to screening services, the mission of the Bureau of Cancer Control is to reduce the number of new cancer cases and deaths throughout Missouri. New cases are prevented through lifestyle modification, which results in a reduced risk of cancer. Awareness of, and access to screening procedures results in early diagnosis, which increases the chances that treatment can diminish or cure the disease. The bureau’s efforts are supported through cooperation with volunteer and nonprofit organizations, local and federal public health agencies, universities and other health-related groups.

This booklet provides the most up-to-date information on the status of cancer in Missouri and our efforts to diminish its effects. With your help, all Missourians can enjoy better health. Your support in establishing and maintaining better lifestyle practices and regular screenings for yourself, your family and your friends will help us achieve that goal.

Maureen E. Dempsey, M.D.
Director
Missouri Department of Health

W h a t I s C a n c e r ?

Overview

“Cancer”

The very word raises fear and concern in many people. Cancer is very serious and upsetting. But, it is a surprisingly common disease. Cancer is the second leading cause of death in Missouri (heart disease is the leading cause).

The prevalence of cancer is due partly to an aging population and partly to decreases in deaths from

other causes, such as stroke. It is also, however, partly due to a variety of cancer-causing lifestyle factors that can be modified, such as smoking, unwholesome diet, lack of physical exercise and excessive sun exposure.

In simple terms, cancer is a disease of uncontrolled growth and spread of abnormal cells. However, cancer is not one single disease. It is actually a

word used for more than 100 separate, different diseases. The type of cancer is usually designated by the site where the cancer first appears, for example lung cancer or breast cancer, even though it may later spread to other areas of the body. Each type of cancer has different causes, symptoms, courses, treatments and chances for successful treatment. ●

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***Cancer will affect
three out of four
Missouri families.***

What Is Cancer?

Incidence

Each year more than 28,000 Missourians are diagnosed with cancer. That's 76 people every day. Rates of newly diagnosed cases, or incidence, in both the U.S. and Missouri, are increasing. One reason for this increase is that cancer rates increase with age and the U.S. and Missouri populations are aging.

Data for Missouri shows that in 1910, the median

age was 24.5 years. By 1998, the median age had increased to 35.7 years.

Additionally, the percent of people in Missouri over the age of 65 years has steadily increased. As the proportion of the population most at risk for cancer continues to increase, the impact of cancer will become even greater if this challenge is not met. ●

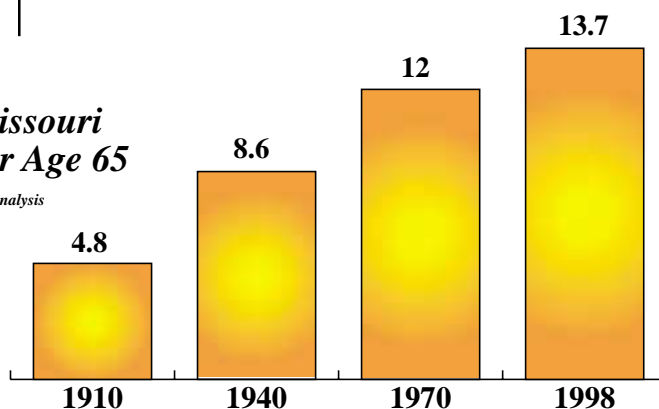
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Percent of Missouri Population over Age 65

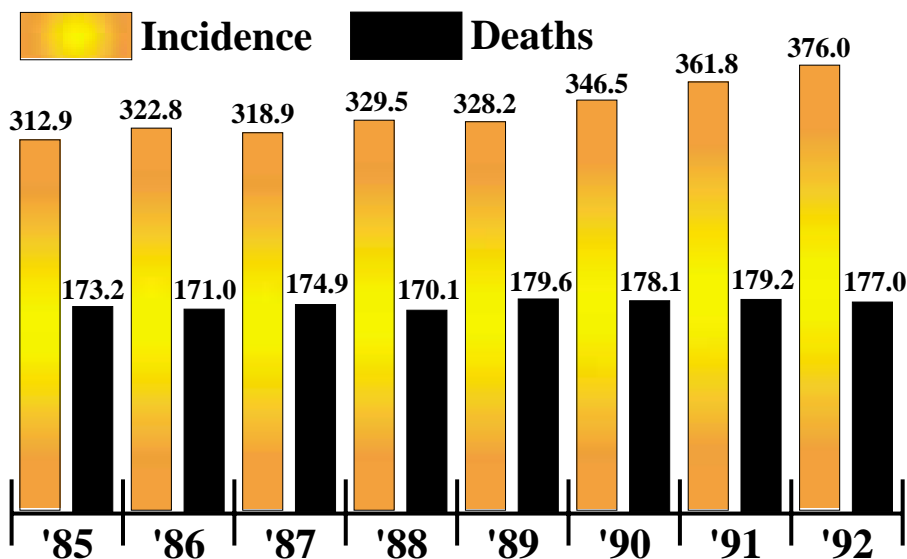
Source: Bureau of Health Data Analysis



Missouri Cancer Rate Trends, 1985-92

per 100,000 age-adjusted to 1970 U.S. standard population

Source: Chronic Disease Data for Decision Making and Planning—Vol 1



What Is Cancer?

Mortality

Cancer accounts for 22% of all deaths in Missouri. Each day, 35 Missourians die from cancer. This comes to about 13,000 people each year. Imagine the entire population of a Missouri community like Farmington or Marshall, or all of the people who reside in Osage County or Montgomery County being

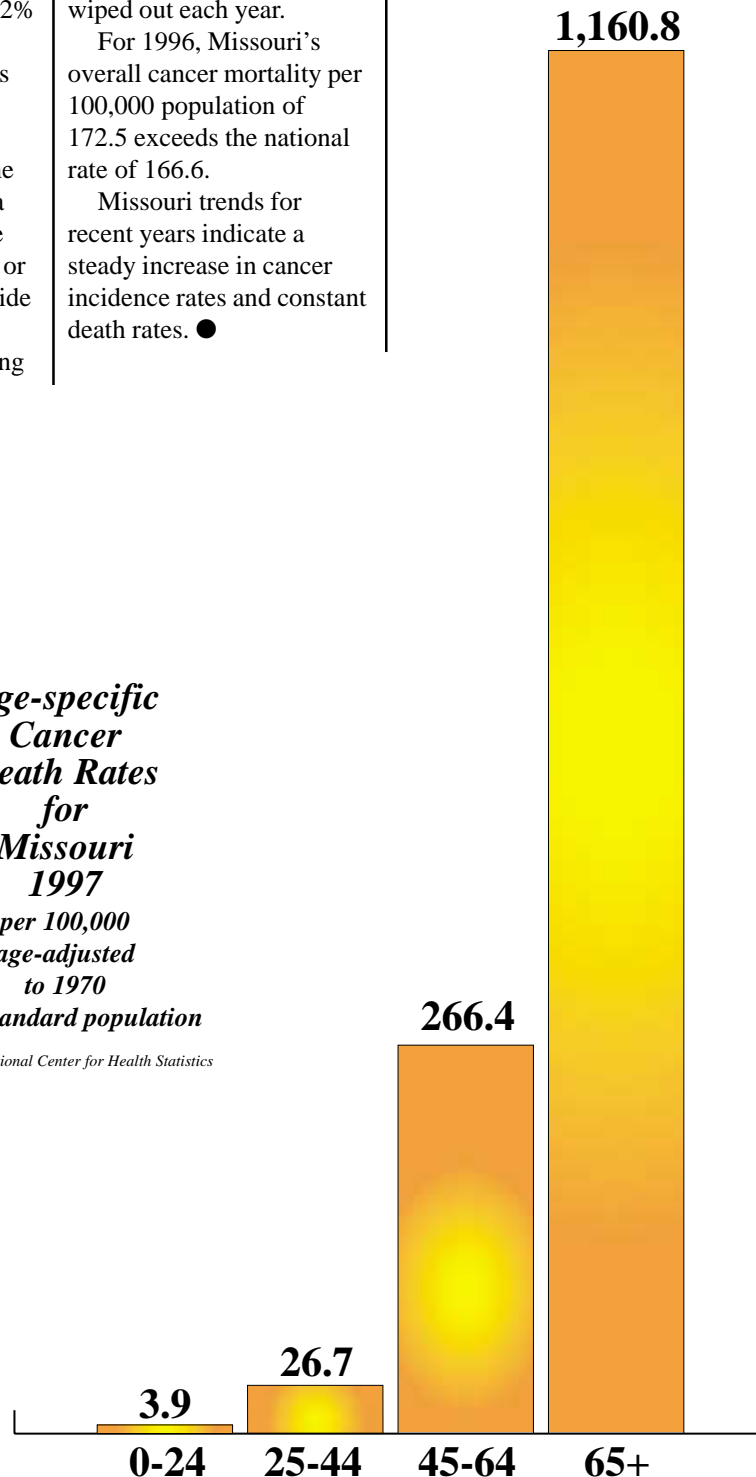
wiped out each year.

For 1996, Missouri's overall cancer mortality per 100,000 population of 172.5 exceeds the national rate of 166.6.

Missouri trends for recent years indicate a steady increase in cancer incidence rates and constant death rates. ●

***Age-specific
Cancer
Death Rates
for
Missouri
1997
per 100,000
age-adjusted
to 1970
U.S. standard population***

Source: National Center for Health Statistics



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W h a t I s C a n c e r ?

Risk Factors for Cancer

Several cancers have risk factors that have been identified. Some of these risk factors can be controlled. For example, 87% of lung cancers have been

associated with tobacco smoking. Another example is that a high-fat, low-vegetable diet can contribute to colorectal cancer. Specific risk factors are

identified elsewhere in this booklet in the sections addressing particular cancers. ●

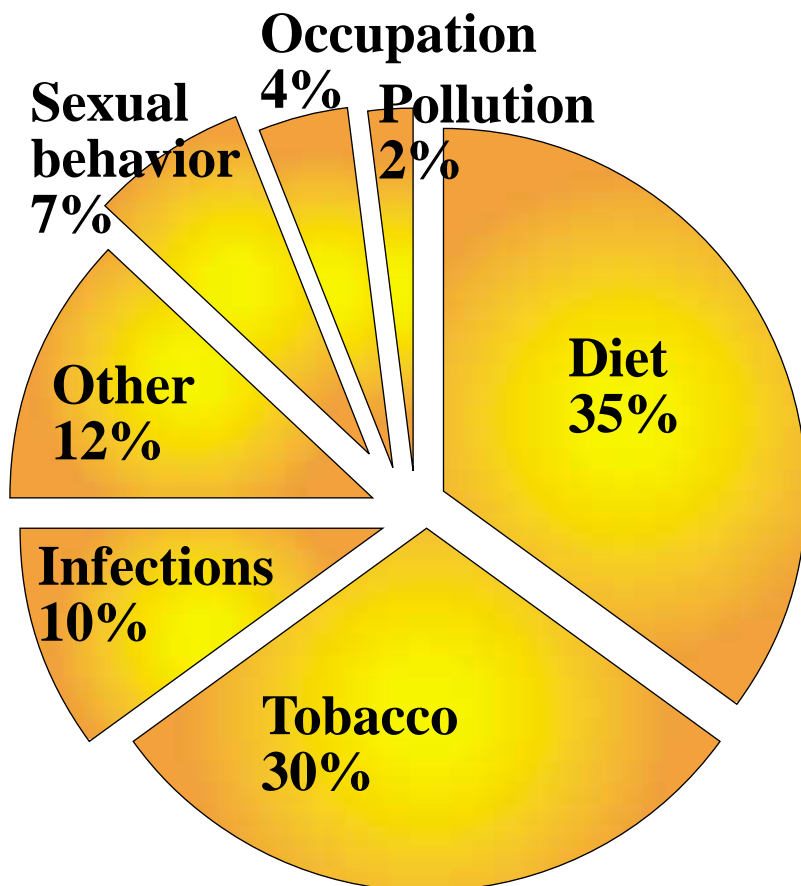
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Proportion of Cancer Deaths Attributed to Different Factors

Source: Doll & Peto, 1981



What Is Cancer?

Poverty, the Overlooked Cancer Risk

Poverty has sometimes been called a cancer-causing condition because of its relationship to higher cancer risks and rates. Reducing poverty can lead to an increase in health care access, regular medical examinations, earlier treatments and adoption of healthier life-style choices.

According to 1990 U.S. Census Bureau data, approximately 24% of Missouri households have incomes of \$10,000 or less per year.

A number of factors contribute to cancer incidence and deaths, such as exposure to tobacco smoke, a high fat diet, lack

Those with lower incomes

- ✓ Experience lower cancer survival rates
- ✓ Are less likely to have health insurance
- ✓ Are less likely to get early detection exams
- ✓ Are more likely to smoke and have other unfavorable health practices
- ✓ Are more likely to be isolated with limited access to health care

of exercise, failure to obtain screenings, and delay of medical treatment until late stages. Poverty is a significant contributor to these factors. ●

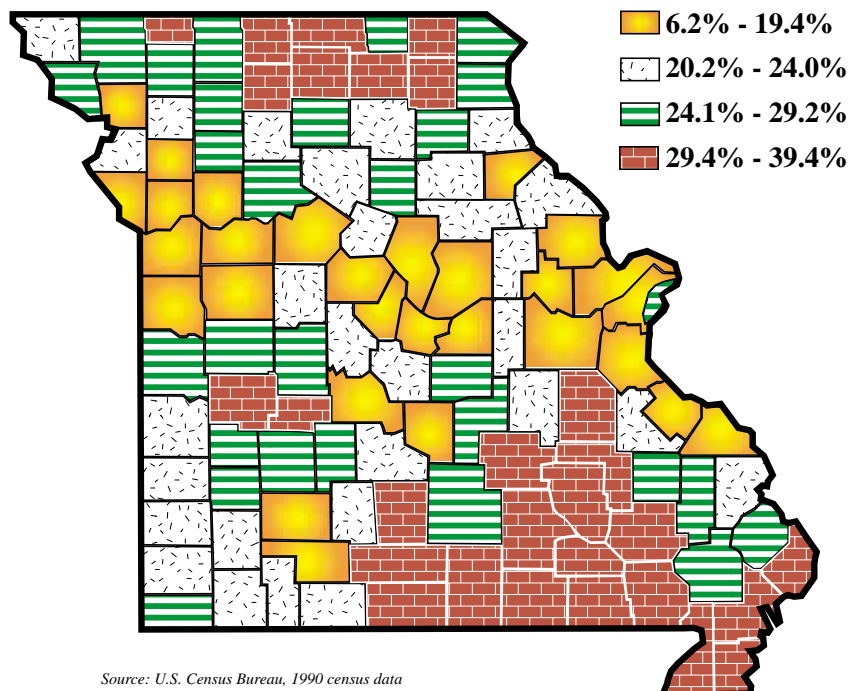
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*Percent of
households
with incomes
less than
\$10,000
per year*

Source: U.S. Census Bureau



Source: U.S. Census Bureau, 1990 census data

W h a t I s C a n c e r ?

Cancer Rates for major types, 1996

per 100,000 age-adjusted 1970 U.S. standard population

Source: Missouri Department of Health,
Office of Surveillance, Research and Evaluation
SEER Cancer Statistics Review

Cancer Site	Incidence		Deaths	
	Missouri	U.S.	Missouri	U.S.
Lung	72.6	55.6	55.5	48.8
Colorectal	53.2	43.2	17.6	16.8
Breast*	125.9	112.4	23.8	24.3
Prostate*	122.9	138.5	21.8	24.0
Melanoma	8.8	14.3	2.7	2.3
Cervical*	9.7	7.9	3.1	2.7
All Cancers	438.8	396.3	172.5	166.6

*Rates are gender specific, cervical excludes *in situ*.

*Missouri ranks 23rd
highest in the U.S.
for overall cancer
deaths.*

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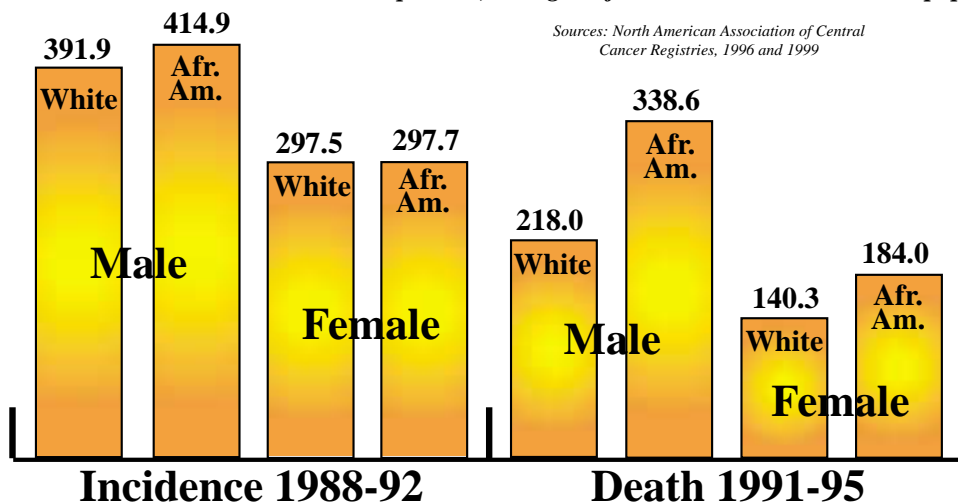


*Sunlight is the
primary risk factor
for skin cancer*

W h a t I s C a n c e r ?

**Overall Cancer Rates for Missouri
by Gender and Race**
per 100,000 age-adjusted U.S. to 1970 standard population

Sources: North American Association of Central
Cancer Registries, 1996 and 1999



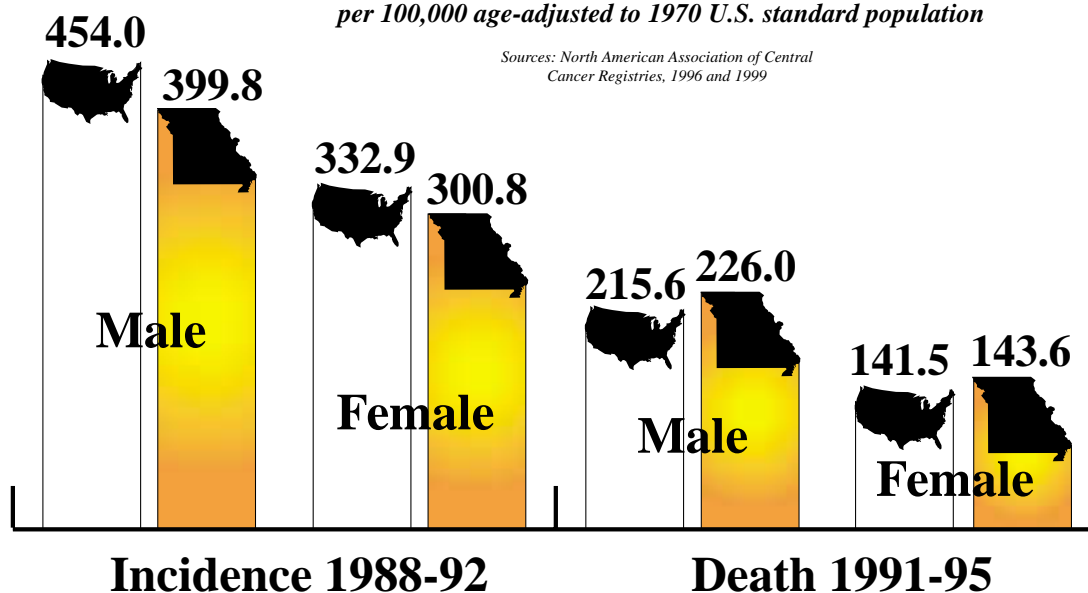
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**Overall Cancer Rates
by Gender, U.S. compared to Missouri**
per 100,000 age-adjusted to 1970 U.S. standard population

Sources: North American Association of Central
Cancer Registries, 1996 and 1999



Overall Cancer Incidence Rates by County 1985-1992

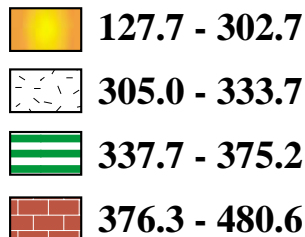
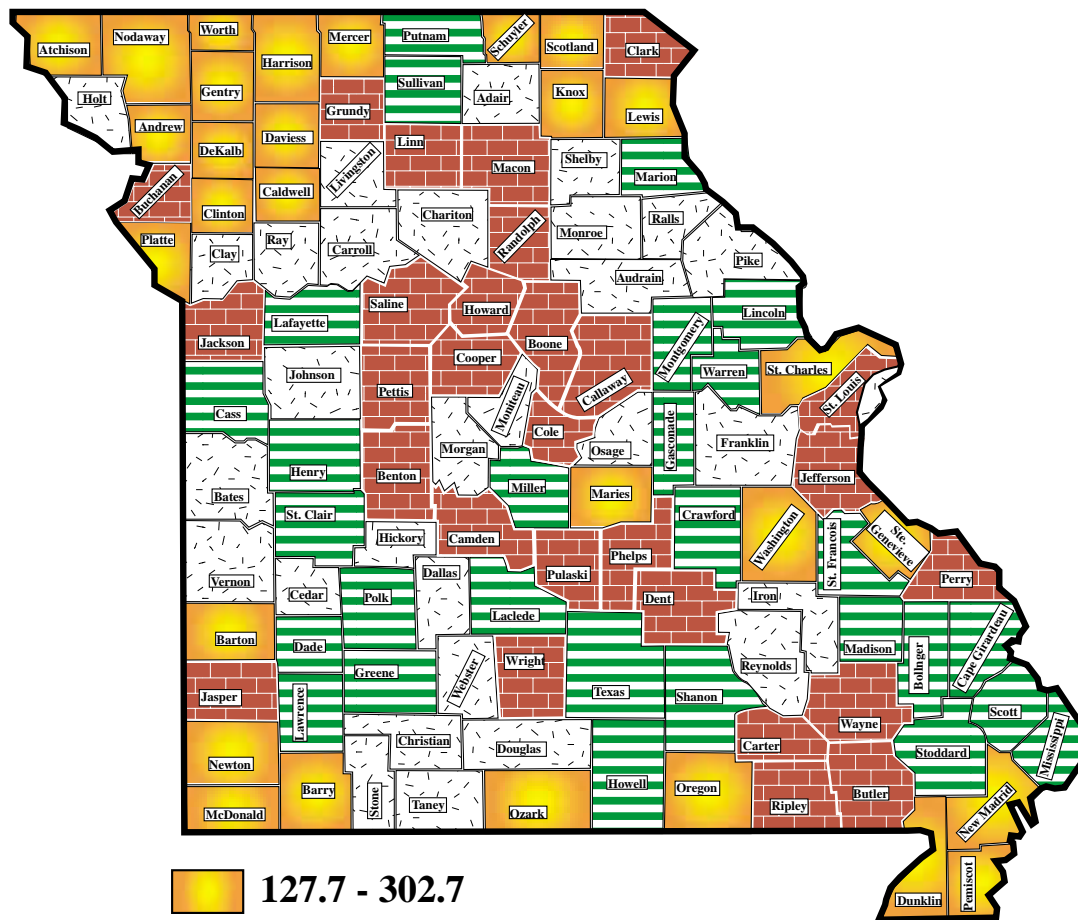
per 100,000 age-adjusted to 1970 U.S. standard population

Source: Missouri Cancer Registry

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State Rate: 358.0

L u n g C a n c e r

Missouri Ranks 11th

highest in U.S. for lung cancer deaths.

Source: National Center for Health Statistics, 1996

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Overall Lung Cancer Rates U.S. Compared to Missouri by Gender per 100,000 age-adjusted to 1970 U.S. std. pop.

Sources: North American Association of Central Cancer Registries, 1996 and 1999

The Main Risk Factors

Tobacco: Tobacco use has a well-proven causal relationship with lung cancer with 87% of lung cancer caused by tobacco smoke. Tobacco use has also been associated with cancers of the mouth, throat, pancreas, cervix, kidney and bladder.

Occupational Exposure: Exposure to certain chemicals in occupational settings may cause lung cancer.

Diet: A high fat diet may contribute to lung cancer, as can being overweight. There may also be a relationship between alcohol consumption and lung cancer.

Genetics: There might be a genetic component to lung cancer.

The people more at risk

Age: The average age at diagnosis is 68. However, cancer may take 20-30 years to develop after exposure to an agent.

Gender: Men are two times more likely to develop lung cancer than women, but the rate for women is rapidly getting closer to that of men. Between 1973 and 1992, women smokers increased by 134%.

Race: African Americans are 12% more likely than whites to develop lung cancer and more likely to develop it earlier in life. The average age of diagnosis is 69 in whites and 65 in African Americans.

Smokers: Smokers are more likely to develop lung cancer than non-smokers: men are 22 times more likely; women are 12 times more likely.

Spouses: Non-smoking spouses of smokers have a 30% greater risk of developing lung cancer than do spouses of nonsmokers.

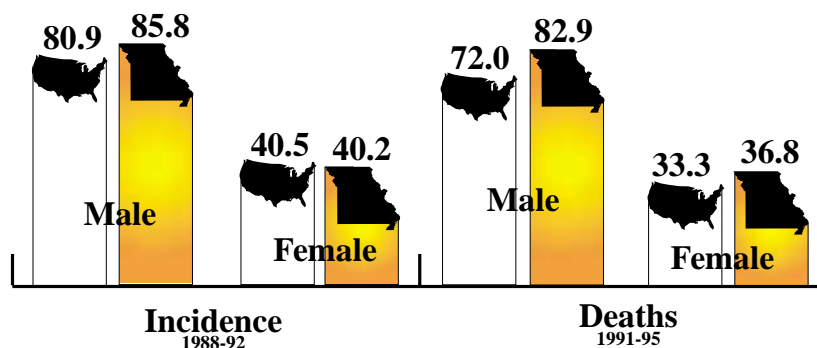
Those more likely to die

Age: Seventy is the average age at death. Most (59%) do not survive past one year after diagnosis.

Gender: Men die of lung cancer at a rate 2 1/2 times that of women. But as more women have started smoking, their rate of lung cancer is rapidly rising. From 1980-96, the death rate of lung cancer for men increased by 6%, but for women it increased by 63%.

Race: African Americans die from lung cancer at a rate that is 25% higher than for whites.

Smokers: Lung cancer mortality rates are 23 times higher for current men smokers and 13 times higher for current women smokers compared to non-smokers. 120,000 Missourians aged 17 or younger in 1995 (1 out of 3) will die of smoking-related diseases during their adult years.

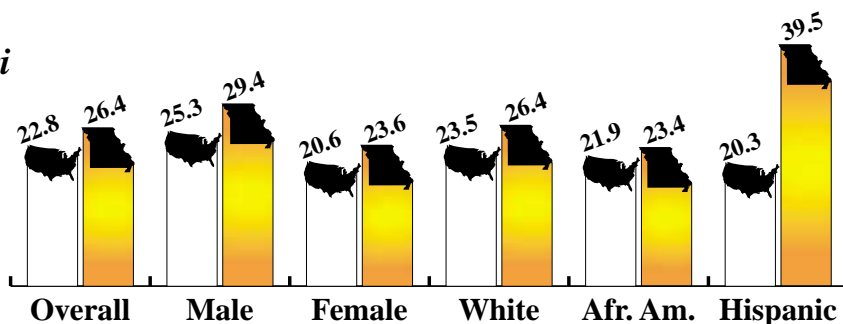


L u n g C a n c e r

Percent of Adult Smokers U.S. Compared to Missouri

Missouri ranks 6th highest in U.S.

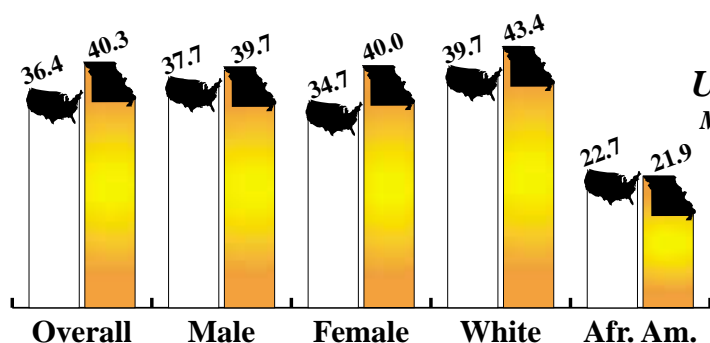
Source: Behavioral Risk Factor
Surveillance System, 1998



Percent of High School Student Smokers, U.S. Compared to Missouri

Missouri ranks within the 10 highest
states in U.S.

Source: Youth Risk Behavior Surveillance
System, 1997



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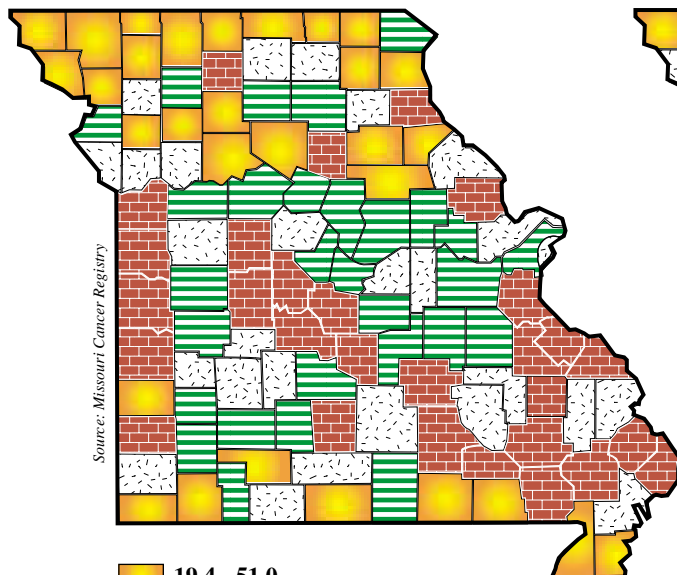
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Lung Cancer Incidence 1985 - 92

per 100,000 age-adjusted to 1970
U.S. standard population

Source: Missouri Cancer Registry

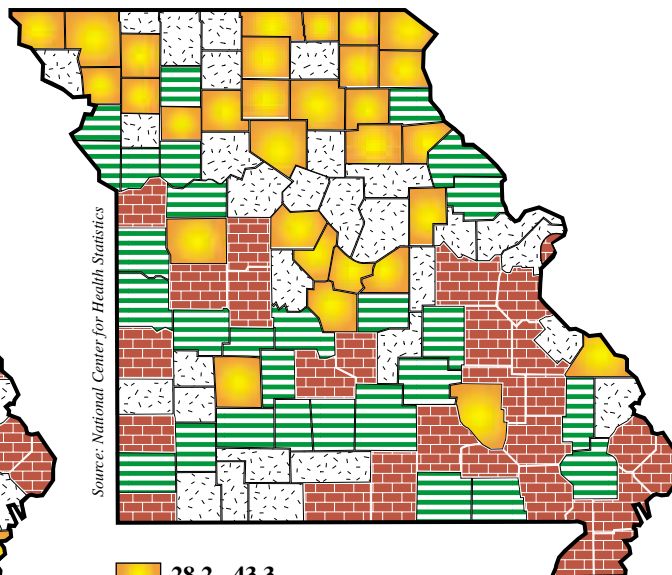


State Rate: 60.5

Lung Cancer Death Rates 1985 - 95

per 100,000 age-adjusted to 1970
U.S. standard population

Source: National Center for Health Statistics



State Rate: 54.0

Colorectal Cancer

Missouri Ranks 24th

highest in U.S. for colorectal cancer deaths.

Source: National Center for Health Statistics, 1996

The Main Risk Factors

Other Diseases:

Occurrence of adenomatous polyp, ulcerative colitis, and Crohn's disease may increase risks for colorectal cancer.

Diet: A diet high in fat and calories may increase the risk of developing colorectal cancer.

Physical Inactivity:

Lack of physical activity may also contribute to colorectal cancer risk.

The people more at risk

Age: Persons over 65 years in age are 15 times more likely to develop colorectal cancer than younger persons.

Gender: The incidence rate is 30% greater in men than women.

Those more likely to die

Age: Persons over 65 years in age are 20 times more likely to die of colorectal cancer than younger persons.

Gender: The death rate for this type of cancer is 35% greater in men than women.

Race: The death rate for this type of cancer is 30% greater in African Americans than whites.

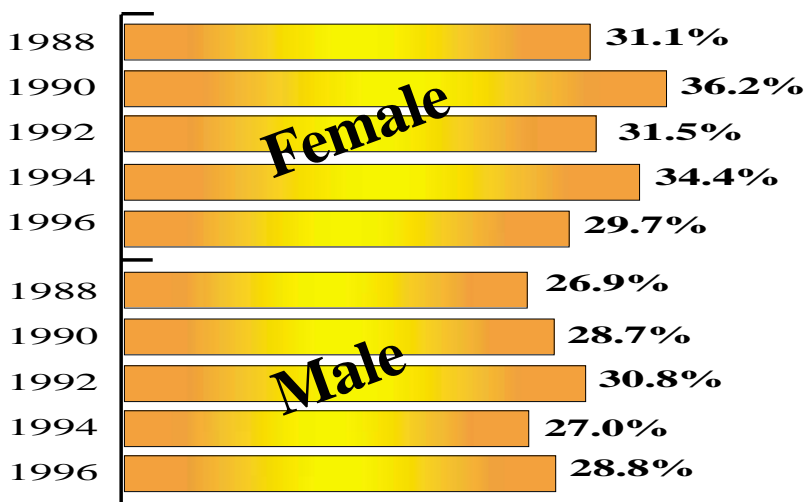
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Leisure Time Physical Inactivity

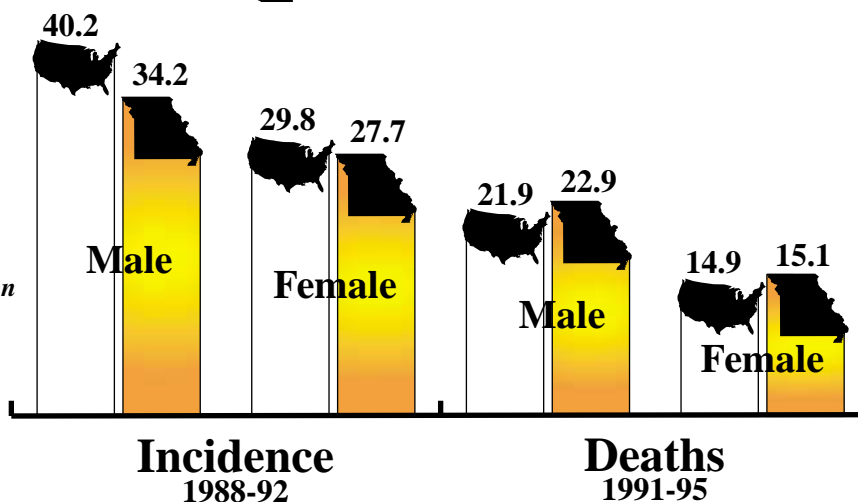
Source: Chronic Disease Data for Decision Making and Planning—Vol II



Colorectal Cancer Rates by Gender U.S. compared to Missouri

per 100,000 age-adjusted to 1970 U.S. standard population

Sources: North American Association of Central Cancer Registries, 1996 and 1999

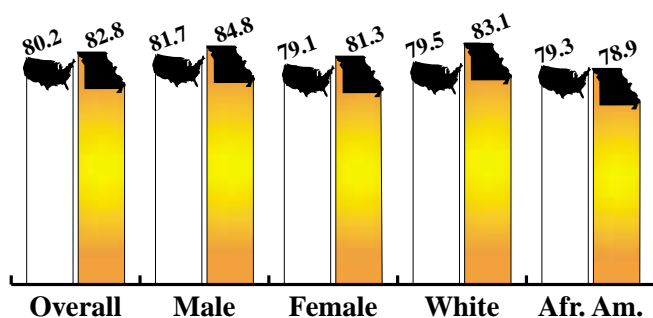
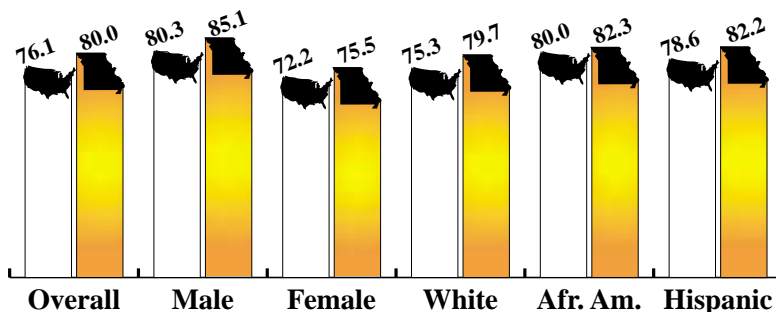


C o l o r e c t a l C a n c e r

**Percent of Adults Eating
less than 5 servings of fruits &
vegetables per day,
U.S. compared to Missouri.**

Missouri ranks 9th highest in the U.S.

Source: Behavioral Risk Factor Surveillance System, 1998



**Percent of Adults
50 Years of Age
and older who reported not having a
Fecal Occult Blood Test
within the last five years,
U.S. compared to Missouri.**

Missouri ranks 22nd highest in U.S.

Source: Behavioral Risk Factor Surveillance System, 1997

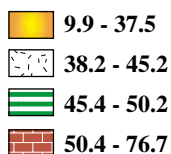
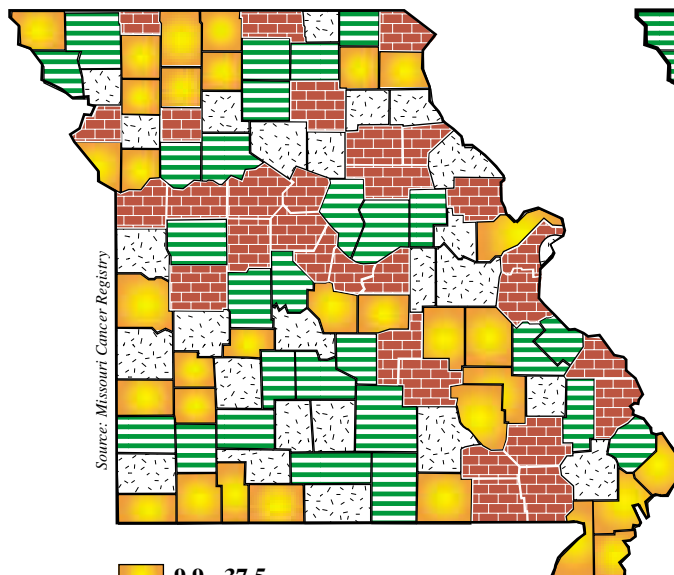
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Colorectal Cancer Incidence 1985 - 92

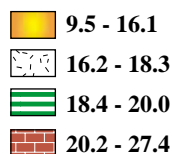
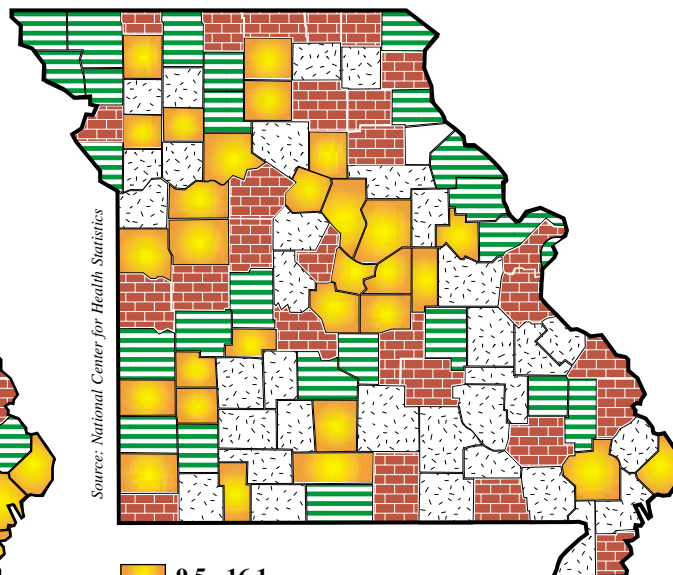
*per 100,000 age-adjusted to 1970
U.S. standard population*



State Rate: 47.5

Colorectal Cancer Death Rates 1985 - 95

*per 100,000 age-adjusted to 1970
U.S. standard population*



State Rate: 19.2

B r e a s t C a n c e r

Missouri Ranks 24th

highest in U.S. for
breast cancer deaths.

*Source: National Center for
Health Statistics, 1996*

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The Main Risk Factors

Hormonal factors:

The amount of estrogen breast tissue is exposed to is thought to be related to breast cancer. This is one reason why breast cancer risk increases with age.

Diet: A diet high in fat and calories may increase one's risk of developing breast cancer. More than three alcoholic drinks per day may also increase risk.

Obesity: Body fat secretes estrogen, so obese women, especially if they are over 60, may have higher rates of breast cancer.

Genetics: Approximately 5% of breast cancer is thought to be related to genetics.

The people more at risk

Age: Over 80% of breast cancer occurs in women past age 50.

Race: White women have an incidence rate that is 15% greater than African-American women.

Income: For unknown reasons, women in higher income groups are at greater risk.

Not insured: Women with health care coverage are over 5 times more likely to obtain mammograms than those without coverage. For low income women with coverage, this increases to 13 times more likely.

Those more likely to die

Age: Risk increases with age, particularly after age 50.

Race: African-American women have a death rate that is 25% greater than white women.

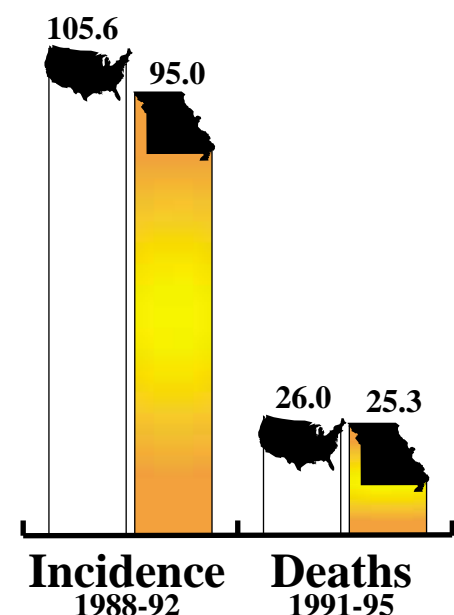
Income: Lower income women may put off medical check-ups because of cost or transportation difficulties.

Not Screened: About 30% of breast cancer deaths could be prevented if women over 50 obtained regular mammograms.

Overall Breast Cancer Rates U.S. Compared to Missouri

per 100,000 women age-adjusted to
1970 U.S. standard population

*Sources: North American
Association of Central Cancer
Registries, 1996 and 1999*

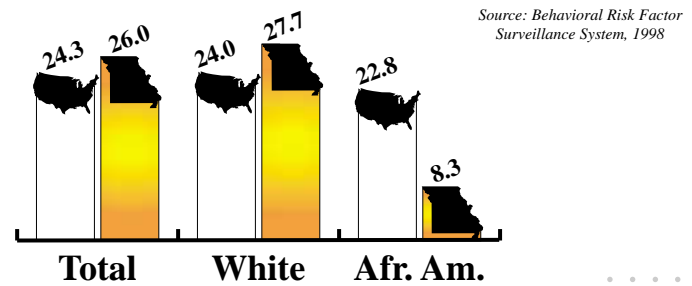


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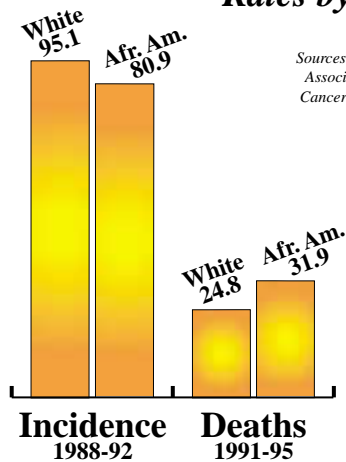
Women Aged 50+ Without Mammogram in Last 2 Years

U.S. Compared to Missouri by Race - 1998

Missouri ranked 19th highest in U.S.



Missouri Breast Cancer Rates by Race



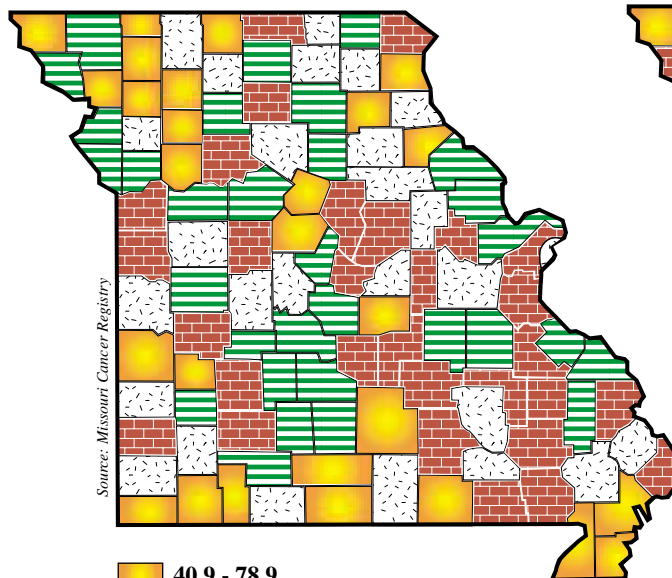
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Breast Cancer Incidence 1985 - 92

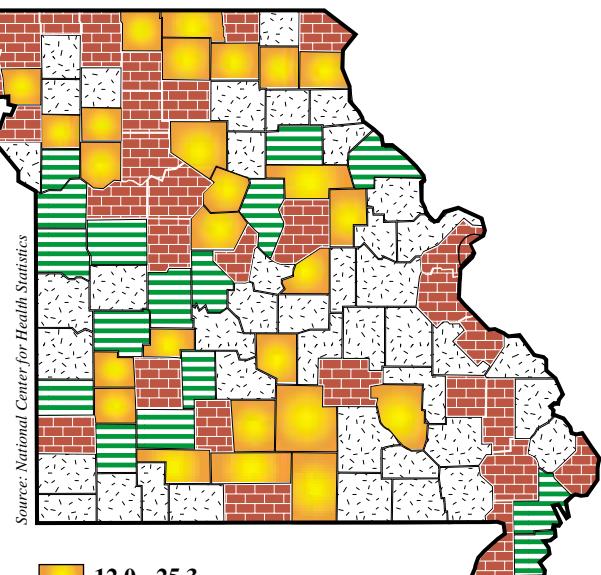
per 100,000 women age adjusted to 1970 U.S. standard population



State Rate: 53.8

Breast Cancer Death Rates 1985 - 95

per 100,000 women age adjusted to 1970 U.S. standard population



State Rate: 28.2

P r o s t a t e C a n c e r

Missouri Ranks 42nd

highest in U.S. for
prostate cancer
deaths.

*Source: National Center for
Health Statistics, 1996*

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The Main Risk Factors

Hormonal factors:

Testosterone seems to be
the most important hor-
mone in the development of
prostate cancer.

Genetics:

There may
be a genetic component to
prostate cancer develop-
ment.

Alcohol:

Alcohol
consumption may increase
the risk of prostate cancer.

Tobacco use:

Cigarette smoking probably
increases the risk of
developing prostate cancer.

Previous disease:

Benign prostatic disease
seems to be related to later
development of prostate
cancer.

The people more at risk

Age:

Men older than 65
years in age are four times
more likely to develop
prostate cancer than men
aged 45-64, and 1,000 times
more likely than men
younger than 45.

Race:

African Ameri-
cans are about 7% more
likely than whites to
develop prostate cancer.

Those most likely to die

Age:

Men older than 65
years in age are 16 times
more likely to die from
prostate cancer than men
aged 45-64; and 900 times
more likely than men
younger than 45.

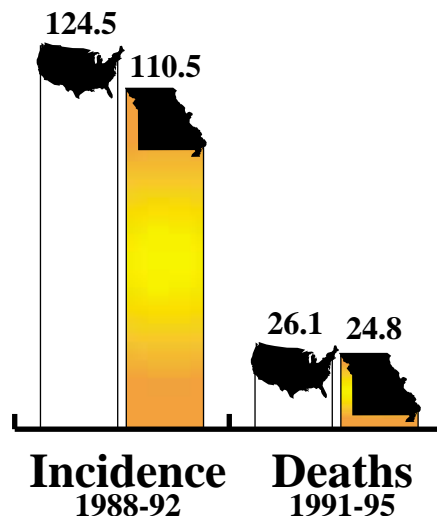
Race:

The death rate
from prostate cancer for
African-American men is
more than 2 1/3 times that
for white men; the death
rate for white men is more
than 2 1/2 times that for
men of races that are
neither white nor African
American.

Prostate Cancer Rates U.S. Compared to Missouri

per 100,000 age-adjusted to 1970
U.S. standard population

*Sources: North American Association of
Central Cancer Registries, 1996 and 1999*



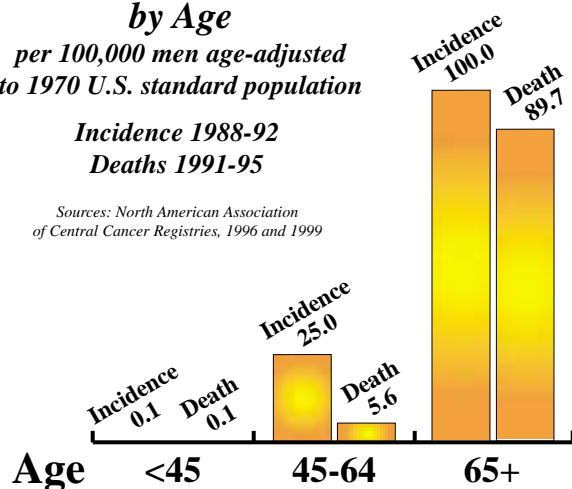
P r o s t a t e C a n c e r

Missouri Prostate Cancer Rates by Age

per 100,000 men age-adjusted to 1970 U.S. standard population

Incidence 1988-92
Deaths 1991-95

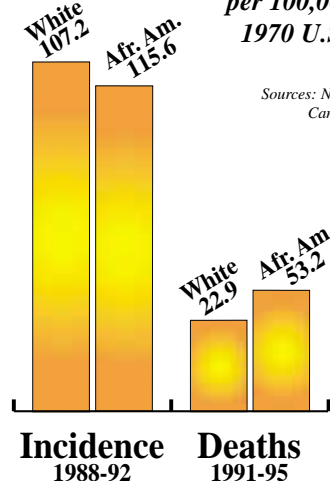
Sources: North American Association of Central Cancer Registries, 1996 and 1999



Missouri Prostate Cancer Rates by Race

per 100,000 men age-adjusted to 1970 U.S. standard population

Sources: North American Association of Central Cancer Registries, 1996 and 1999



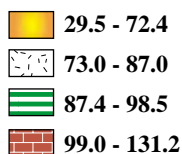
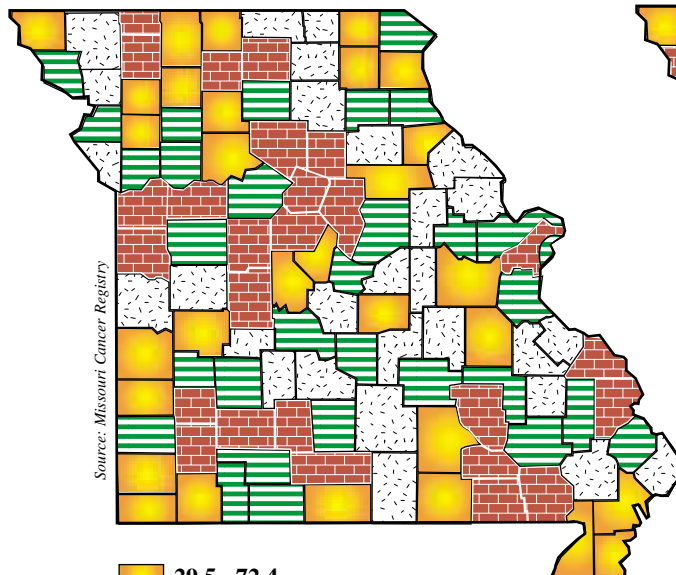
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Prostate Cancer Incidence 1985 - 92

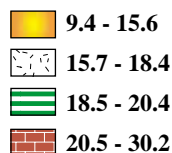
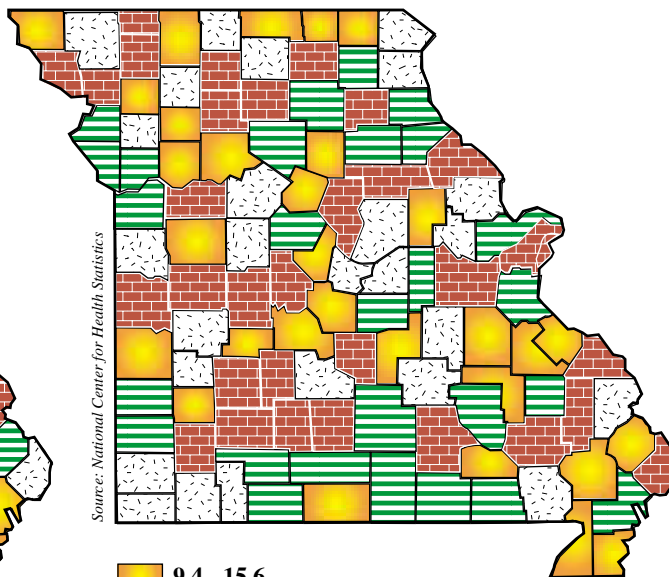
per 100,000 men age-adjusted to 1970 U.S. standard population



State Rate: 100.1

Prostate Cancer Death Rates 1985 - 95

per 100,000 men age-adjusted to 1970 U.S. standard population



State Rate: 20.1

C e r v i c a l C a n c e r

Missouri Ranks 14th

highest in U.S. for cervical cancer deaths.

Source: National Center for Health Statistics, 1996

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The Main Risk Factors

HPV infection:

Certain types of the human papilloma virus (HPV) are the most likely cause of cervical cancer.

Other sexually transmitted disease:

Herpes simplex 2 (HSV-2) and chlamydia have been linked to cervical cancer. Multiple infections at the same time and HIV infection have also been suspected of increasing risk.

Early sexual activity:

Women who become sexually active at a young age are more likely to develop cervical cancer.

Tobacco use:

Tobacco use has been linked to an increased risk of cervical cancer.

The people more at risk

Age: Women between the ages of 25-34 are more likely diagnosed with the more easily treated in situ cervical cancer than women of other age groups. Women over age 50 are more likely diagnosed with the less easily treated invasive cervical cancer than women of other age groups.

Race: African-American women are two times more likely to develop cervical cancer than white women.

Income: Lower income women without health coverage are 1 1/2 times less likely to obtain an annual Pap test than women who have health coverage.

Those more likely to die

Age: Invasive cervical cancer, which has a higher mortality rate than in situ cervical cancer, is usually diagnosed in women over 50.

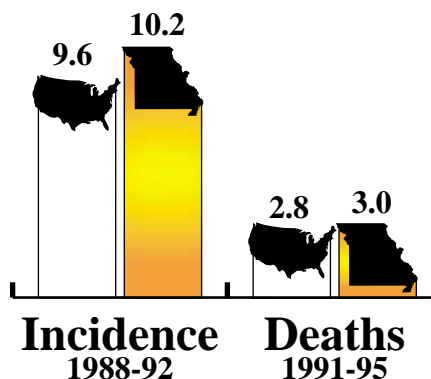
Race: African-American women are 2 1/3 times more likely than white women to die of this disease.

Income: Poor women are at greater risk, perhaps because they cannot afford regular Pap tests. Cervical cancer was once one of the most common causes of cancer death for American women. But from 1955 to 1992, deaths from cervical cancer declined by 74% due to increased use and availability of the Pap test.

Cervical Cancer Rates U.S. compared to Missouri

per 100,000
women age-adjusted to
1970 U.S. standard
population

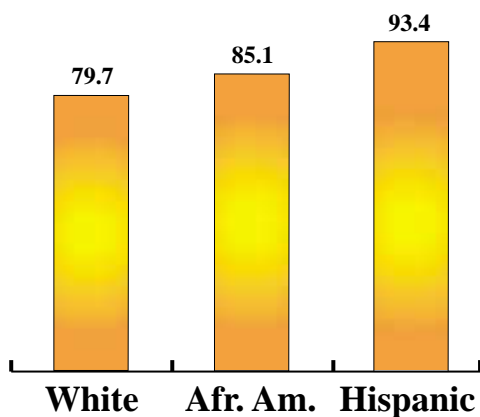
Sources: North American Association of Central Cancer Registries, 1996 and 1999



C e r v i c a l C a n c e r

Percent of Missouri Women with Pap Smears Within Past Two Years by Race

Sources: CDC, Behavioral Risk Factor
Surveillance System, 1998



Missouri Cervical Cancer Rates by Race

per 100,000 women age-adjusted
to 1970 U.S. std pop

Sources: North American Association
of Central Cancer Registries, 1996 and 1999



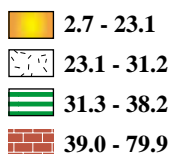
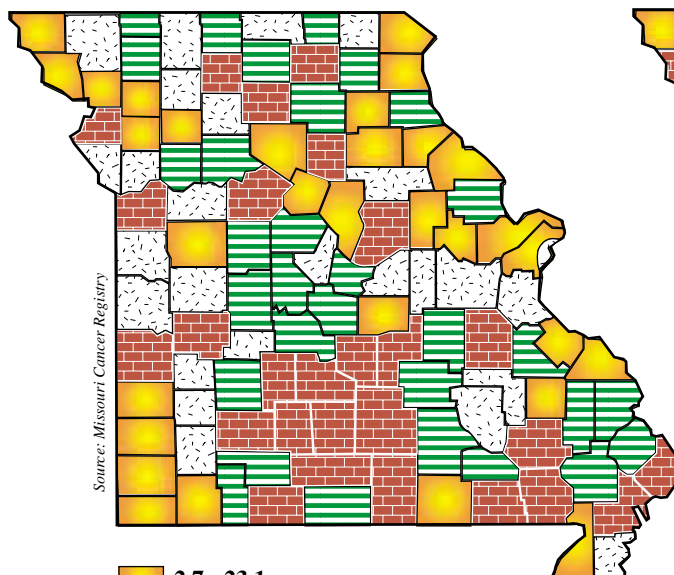
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Cervical Cancer Incidence 1985 - 92

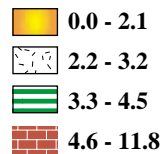
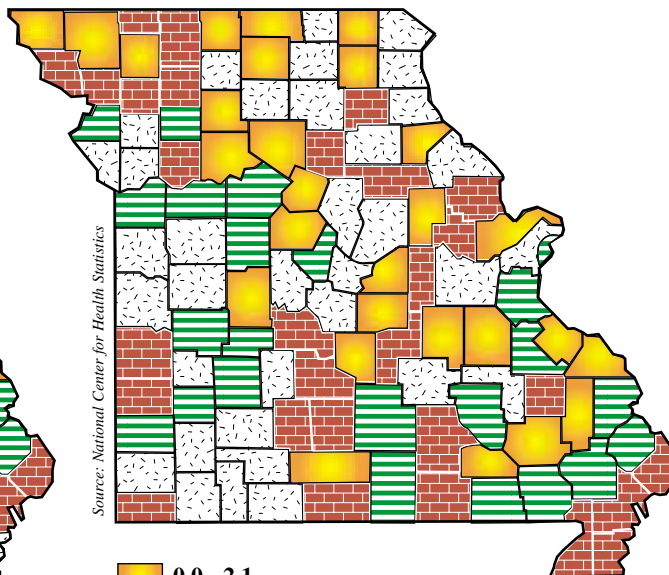
per 100,000 women age-adjusted
to 1970 U.S. standard population



State Rate: 30.6

Cervical Cancer Death Rates 1985 - 95

per 100,000 women age-adjusted
to 1970 U.S. standard population



State Rate: 3.1

M e l a n o m a S k i n C a n c e r

Missouri Ranks 21st

highest in U.S. for
melanoma deaths.

*Source: National Center for
Health Statistics, 1996*

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The Main Risk Factors

Sunlight: Exposure to the ultra-violet (UV) radiation in sunlight is the strongest risk factor. Even a couple of blistering sunburns in youth can double the risk of melanoma.

Artificial UV radiation: Use of tanning beds and sunlamps as little as 1-3 times a year can double the risk of developing melanoma. Use of the devices 4-10 times a year can increase the risk by seven times.

Occupation: Workers exposed to certain chemicals in occupational settings may be at increased risk. Such chemicals may include vinyl chloride and PCBs.

Genetic Factors: Fair or red hair, blue eyes, and pale complexion increase one's risk of developing melanoma.

The people more at risk

Age: Persons aged 65 or older are two times as likely to develop melanoma as persons aged 45-64, and eight times as likely as persons younger than 45.

Sex: Rates for men are 1 1/2 times that for women.

Race: Whites have a risk factor 80 times that of African Americans.

Physical features: Blondes and redheads have a rate 2-4 times that of brunettes.

Those more likely to die

Age: Persons over 65 years in age are two times as likely to die from melanoma as people aged 45-64, and eight times more likely than people under 45.

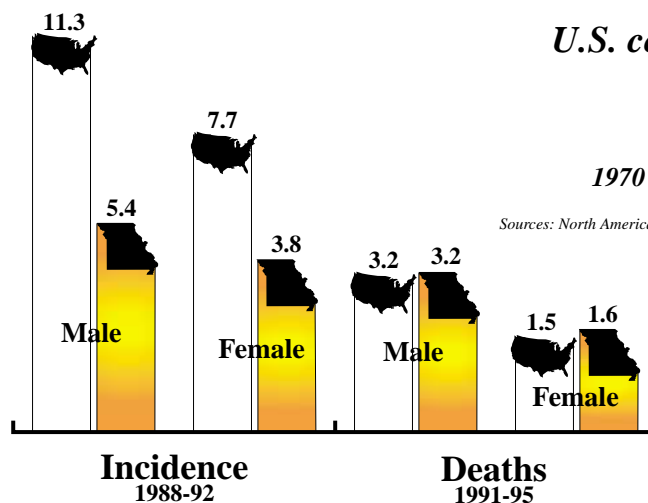
Sex: The death rate for men is two times that of women.

Race: Whites are nine times more likely to die from melanoma than African Americans.

Melanoma Cancer Rates by Gender U.S. compared to Missouri

*per 100,000
age-adjusted to
1970 U.S. standard population*

Sources: North American Association of Central Cancer Registries, 1996 and 1999

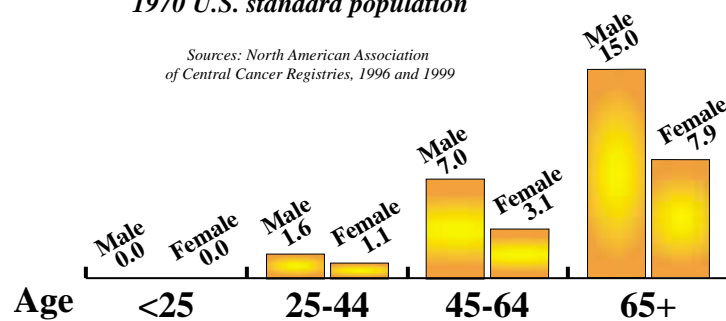


M e l a n o m a S k i n C a n c e r

Missouri Melanoma Rates by Age & Gender

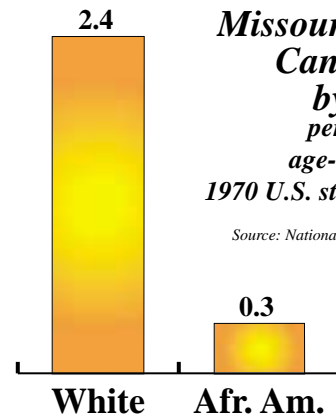
per 100,000 age-adjusted to
1970 U.S. standard population

Sources: North American Association
of Central Cancer Registries, 1996 and 1999



Missouri Melanoma Cancer Rates by Race per 100,000 age-adjusted to 1970 U.S. standard population

Source: National Center for Health Statistics



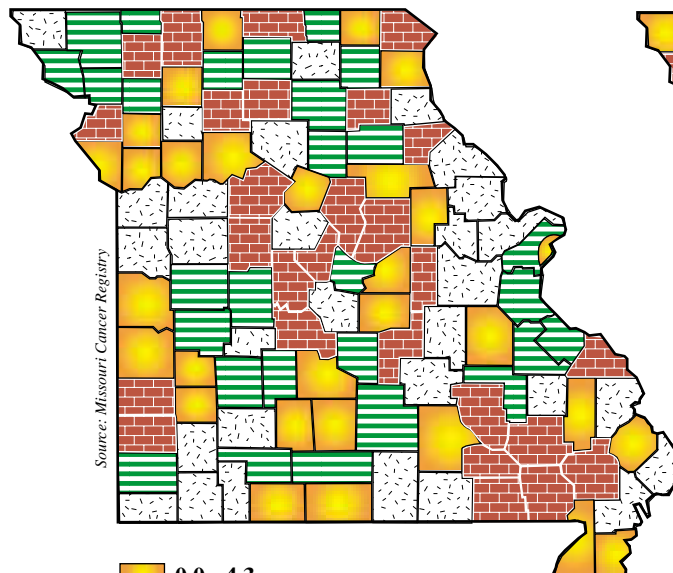
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Melanoma Cancer Incidence 1985 - 92

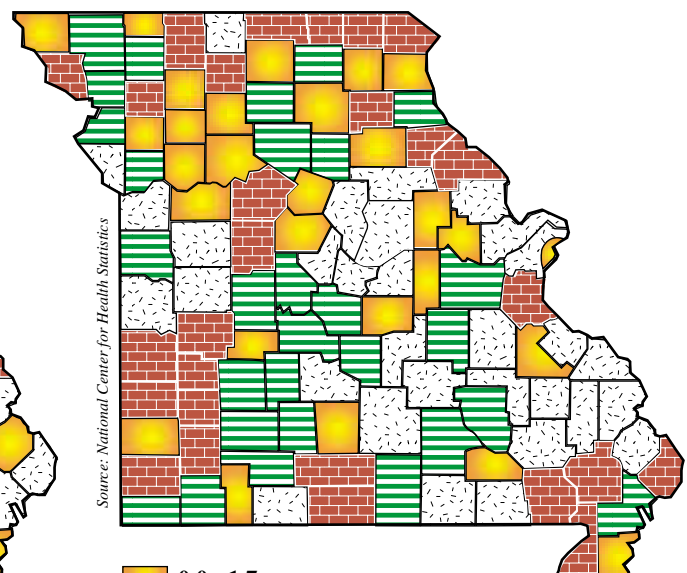
per 100,000 age-adjusted to
1970 U.S. standard population



State Rate: 6.4

Melanoma Cancer Death Rates 1985 - 95

per 100,000 age-adjusted to
1970 U.S. standard population



State Rate: 2.3

C o s t o f C a n c e r

Years of
Potential
Life Lost

A person born in Missouri today can expect to live an average of 75.7 years. Many persons die of cancer before reaching that age. The years they could have lived until the age of the average life expectancy are referred to as “Years of Potential Life Lost.” In 1998, there were 7,069 Missourians who died of cancer before reaching age 75.

Cancer robbed each of these victims an average of 13¼ years from their lives. The following table represents the years of potential life lost for total and selected types of cancer. (For purposes of rounding, the 75.8 years average life expectancy has been rounded to 75, thus the estimates in the table are conservative.) ●

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Cancer Site	Deaths before age 75	Years of potential life lost
Breast	587	9,849
Cervical	66	1,323
Colorectal	617	7,262
Lung	2,476	27,906
Melanoma	123	2,031
Prostate	229	1,706
Other	2,971	43,410
Total	7,069	93,487

Source: Bureau of Health Data Analysis

C o s t o f C a n c e r

Economic Cost of Cancer

The economic costs of cancer to Missouri are enormous. The cost of hospital care alone for cancer patients is over \$320 million per year as indicated in the formula below. In addition to these costs, there are substantial uncalculated expenses in medical care, nursing home or hospice care, and treatments to combat diagnosed cancer. Insurance premiums and Medicaid payments also translate to significant contributions from policy holders and taxpayers. Missouri businesses are also impacted by lost work time and reduced productivity. The total economic impact is estimated at \$ 1.6 billion each year.

Costs for some cancers can be dramatically reduced by regular screening for early detection and treatment.

One of the most effective screening examinations is for colorectal cancer. Regular screening in accordance with American Cancer Society and Missouri Department of Health recommendations can dramatically reduce deaths. Just an annual Fecal Occult Blood Test (FOBT) among those 50 or older can reduce deaths from this disease by over 30%. Combined with a flexible sigmoidoscopy, the number of deaths can be reduced by 70%. With a colonoscopy, these deaths can be reduced by 80%.

Without screening, colorectal cancers are generally discovered at a later stage or not discovered at all. Less than 8% of patients diagnosed with colorectal cancer in the late stages survive longer than five years after diagnosis.

Early detection and treatment results in greater probability of successful and less extensive treatment. It also reduces the likelihood of recurrence or spread to other areas in the body. ●

Costs That Can't be Measured in Dollars

For families struck by cancer, there are costs that can not be measured in dollars. Physical, social and emotional consequences are enormous. The impact for patients, families, friends and communities include pain, suffering, disability and death. It is especially painful when many of these deaths are needlessly premature.

Pain for the individual can be both physical and emotional. Most often physical pain can be treated effectively. Existing medications and techniques can provide relief for patients and help the incurably ill to die with dignity. The right medication in the right dose given at the right time relieves at least 80 – 90 % of pain. Relief for emotional pain can come from family, clergy, counselors and medical professionals. Many hospitals have counselors and chaplains on hand. Hospices are particularly sensitive to meeting emotional needs. ●

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Missouri's Average Hospitalization Costs for Cancer for 1998

Source: Bureau of Health Data Analysis

cost for one day — \$1,670

days per patient — 5.6

patient hosp. stays — 34,432

Total Cost \$ 322,008,064



What Can Be Done

Cancer can be frightening. The good news is that there are two effective ways to beat cancer. First, many cancers are often preventable because they are caused by lifestyle habits that can be changed. For example, the recent decline in smoking is partially responsible for a drop in cancer deaths. The second method is to have periodic screenings at proper intervals. Early detection and treatment can cure a cancer while the chances are best for success.

What you can do to reduce your risk of cancer

The cancers of most concern in Missouri are those of the lung, colon, breast, cervix, prostate and skin. Good lifestyle habits combined with recommended screening schedules greatly improves the

chances against developing cancer and dramatically increase the chances of successful treatment should a cancer be detected. There are many simple steps that one can take to decrease the risk of developing cancer.

The first set of steps deals with changing the behaviors that might increase your risk. The second set concerns screening. ●

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Make it a Habit

Get regular exercise.

Just thirty minutes a day, three or four times a week, can help. Exercise can be as simple as a brisk walk.

Don't use tobacco.

If you don't smoke, don't start. Even being exposed to second-hand smoke presents a risk. Smokeless tobacco isn't safe, either. If you smoke or use smokeless tobacco, quit. Your doctor can help.

Control your weight.

Besides the direct impact on reducing cancer risks, maintaining a proper weight can make it easier to exercise and enjoy life in general.

Block the sun.

Protect yourself from the sun to reduce your chance of developing skin cancer. Wear a hat, long sleeves and pants, sunglasses, seek shade, and use sunscreen.

5-A-Day.

Eat at least five servings of fruits and vegetables a day. This provides fiber and many helpful vitamins that can reduce your risk of cancer.

Get screened.

Get the proper screenings at the proper intervals. Recommendations of the Missouri Department of Health and of the American Cancer Society are outlined in the table on the next page.

What Can Be Done

Screening recommendations of the Missouri Department of Health and the American Cancer Society

Cancer	Screening	Interval
Breast	Mammogram	Every year from age 40
	Clinical breast exam	Every three years from age 20, every year from age 40
	Self-exam	Monthly from age 20
Cervical	Pap test	Yearly for women over 18 or Yearly for sexually active women under 18
Prostate*	Digital rectal exam	Yearly from age 50
	Prostate Specific Antigen (PSA)	Yearly from age 50
Colorectal**	Fecal Occult Blood Test (FOBT) and Sigmoidoscopy	Yearly from age 50
		Every 3 to 5 years from age 50
	or Colonoscopy	Every 10 years from age 50
	or Double Contrast Barium Enema	Every 5-10 years from age 50

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* Men in higher risk groups, such as African Americans, or those with strong familial predisposition, may begin at an earlier age.

** If an immediate relative had been diagnosed with colorectal cancer before the age of 60, then your screening should begin when you reach an age 10 years before the age when he or she was diagnosed.

The Bureau of Cancer Control

Bureau of Cancer Control

The Bureau of Cancer Control (BCC) is a unit within the Missouri Department of Health – Division of Chronic Disease Prevention and Health Promotion. The BCC aspires to provide information and education through a variety of channels to reduce the burden of cancer.

Much of this is accomplished by working with local and federal governmental agencies, as well as counterparts in other states, and, most importantly, through cooperation with volunteer agencies and community groups.

The BCC directs the Missouri Breast and Cervical Cancer Control

Project and the Missouri Cancer Inquiry Program. To address a more comprehensive approach to control other cancers, the BCC also assists eight regional Cancer Control Coalitions through the Missouri Cancer Control Advisory Board. ●

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What the Bureau of Cancer Control Offers

In partnership with federal, state, local health, and volunteer agencies, BCC offers:

- ✓ **Free** mammograms and Pap tests to low income uninsured and underinsured women
- ✓ **Education** about sun-safe behavior and materials to learn how to reduce skin cancer
- ✓ **Response** to citizen concerns about cancer in their community
- ✓ **Assistance** both technical and funding, for eight cancer control coalitions
- ✓ **Professional** and public education related to cancer and cancer risk factors
- ✓ **PSAs** (Public Service Announcements) regarding the prevention or screening of different types of cancer
- ✓ **Information** on cancer prevention and control resources in Missouri
- ✓ **Development** and distribution of brochures, presentations to public groups, health professionals, and other interested parties

The BCC cooperates with a number of volunteer organizations, universities, coalitions and other governmental agencies to reduce the cancer burden in Missouri. A listing of some of the partners in cancer control are provided with their addresses later in this publication. ●

The Bureau of Cancer Control

The role of the Cancer Control Advisory Board

The policy-making/implementation body for the Comprehensive Cancer Control Program is the Cancer Control Advisory Board (CCAB). This board guides BCC staff and regional Cancer Control Coalitions in priority setting, coalition building and program evaluation. The regional coalitions, comprised of community stakeholders, serve as links between CCAB and local communities. These coalitions can tailor policies and goals to their specific community situation and needs. ●

Activities, Goals and Challenges

For several years, BCC has received \$3,000,000 in federal funding and \$97,000 in state funding expressly for breast and cervical cancer control and prevention. However, BCC has less than \$15,000 in Public Health Service block grant funds to conduct cancer control activities for all other types of cancer, including the top two cancer-related killers in Missouri: lung and colorectal cancer. Some of the activities in place in the BCC, such as skin cancer

and colorectal cancer awareness efforts, are limited in scope. To effectively expand these programs and to add programs to address other issues such as screening for other cancers, requires continuous planning, evaluation and financial resources.

Goals for the BCC include obtaining and fitting cancer prevention and control services into health systems; and easier access to and use of cancer prevention, early detection and treatment services.

The challenge lies before us to find interventions and partnerships that can have an impact which maximizes the investment of financial resources. The BCC has accomplished some measure of success. For example, with no dedicated budget, materials for skin cancer awareness were distributed through a cooperative effort with the Division of Maternal, Child and Family Health and the Division of Health Standards and Licensure. In addition, items or articles pertaining to skin cancer awareness and prevention were placed in publications issued by the Division of Tourism, the Department of Conservation and the Department of Elementary and Secondary Education. Skin cancer information was provided to day care centers and at tourist information centers with the goal of increasing awareness of the importance of protection from ultraviolet radiation damage, espe-

cially for children and adolescents. Additionally, media releases on skin cancer received coverage on several rural radio stations and led to participation on a call-in radio show on this topic. Finally, a major outdoor advertising agency generously donated billboard space for skin cancer prevention messages along major highways in the state.

The BCC will continue to strengthen its cooperative efforts with regional cancer control coalitions and the Cancer Control Advisory Board. Recognizing the strength and commitment of volunteer agencies, organizations and citizens to reduce the burden of cancer, the BCC will provide technical assistance, funding where possible and information and resources as needed.

In addition, the BCC will continue cooperative efforts with the U.S. Centers for Disease Control and Prevention regarding skin cancer and sun-safe behavior, colorectal cancer screening, breast and cervical cancer screening and any additional CDC initiatives for comprehensive cancer control. The Breast and Cervical Cancer Control Project will continue to provide mammograms and diagnostic services for older Missouri women with limited resources. ●

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The Bureau of Cancer Control

State and Federal Planning

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Healthy People 2010

Cancer does not recognize state borders. Cancer control is a concern in all fifty states, as well as with the federal government. In an unprecedented collaboration among government, voluntary and professional organizations, a basic framework of Healthy People 2000 was developed. The main goals were: increase the span of healthy life; reduce health disparities; and achieve access to preventive services for all citizens. Healthy People 2010 is a further refinement, which broadens disease prevention steps; improves surveillance and data systems; and promotes a heightened awareness and demand for preventive health services. This national plan fits into the Department of Health's Strategic Plan and the Governor's Show-Me Results.

One of the goals is to reduce the rates of new cases and deaths from those cancers that are more easily prevented by changing lifestyle habits or successfully treated through early detection. These are cancers of the lung, colon/rectum, breast, prostate, cervix and skin.

It may be surprising to some, but many of the lifestyle practices that will

reduce the risk of cancer are often the same for reducing the risk of other diseases, such as cardiovascular disease, stroke, diabetes and high blood pressure. In particular, regular moderate exercise, proper nutritious diet and avoiding tobacco, including secondhand smoke and smokeless tobacco, will substantially reduce the risks for many cancers.

The goal of Healthy People 2010 is to reduce cancer rates by: 1) informing the public of lifestyle practices that can reduce their risks; 2) encouraging routine screening; and, 3) providing access and means for follow-up treatment for breast or cervical cancer for low income women.●

DOH Strategic Plan

The Department of Health has established "Healthy People, Healthy Communities," a strategic plan that in the area of cancer aims for: 1) decreased illness, disability and premature death; and 2) reduced risk through healthier behaviors. The main objective is to reduce Missouri's overall cancer mortality rate to no more than that of the national overall rate. More specific objectives are stated for

reduction of deaths from:

1) breast cancer, by having more women aged 50 or older obtain regular mammogram and clinical breast examinations; and 2) cervical cancer, by having women aged 18 and older obtain regular Pap tests.

In addition, concerns of possible cancer clusters in communities are addressed and, when appropriate, investigated and reported.●

Show-Me Results

Show-Me Results is an effort to make state government more effective in achieving the results that citizens expect and deserve. This is pursued not only through individual agency plans but through planning and collaboration among state agencies. The Show-Me Results of the Bureau of Cancer Control call for decreased incidence and mortality rates of cancer in Missouri.●

The Bureau of Cancer Control

Evaluation of Effectiveness

The Bureau of Cancer Control has access to specialized data sources that may help determine whether there are short-term changes regarding cancer control. The Behavioral Risk Factor Surveillance System (BRFSS) is an ongoing telephone survey conducted by DOH's Office of Surveillance, Research and Evaluation. The BRFSS measures risk factor behavior among Missourians. Some of the questions in this survey can determine if lifestyle habits are changing for the better, which should result in a more accurate measure of cancer prevention. State and regional BRFSS

summaries can be accessed at:

[www.health.state.mo.us/
Publications/
Chronicreference.
htm](http://www.health.state.mo.us/Publications/Chronicreference.htm)

or by contacting DOH. Additionally, cancer incidence and mortality data from the Missouri Cancer Registry can provide information to measure long-term trends in cancer control.

Cancer may not develop until after 10, 20 or even more than 30 years of lifestyle habits or exposure to a known cancer-causing agent. Because of this lengthy latency period,

cancer control measures taken today may not show results for many years to come. For that reason, it is often difficult to demonstrate a direct link between current activities and future outcomes.

However, science has demonstrated that abstinence from tobacco, increased exercise and a diet high in fruits and vegetables and low in fat can reduce one's risk of developing cancer. It is also a fact that many cancers can be cured when caught early enough. This is why **prevention** and **early detection** are two of the most crucial links in the fight against cancer! ●

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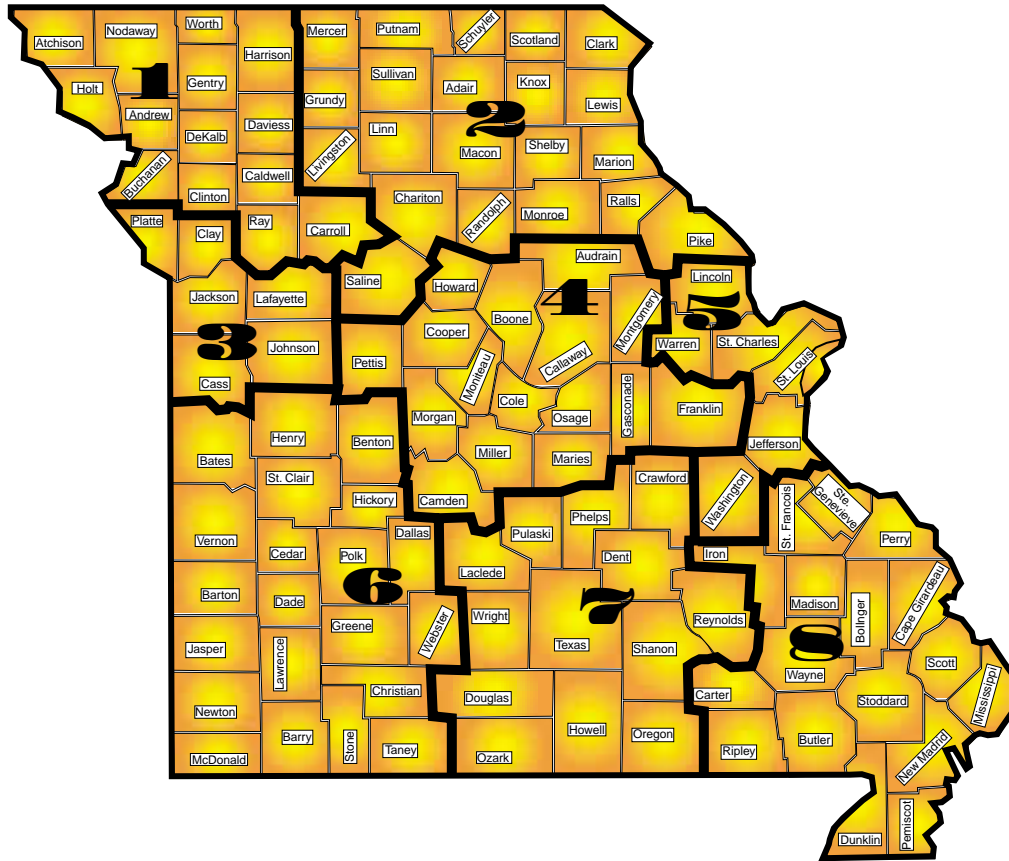
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*Prevention and early
detection are two of the
most crucial links in the
fight against cancer!*

The Mission

of the Bureau of Cancer Control (BCC) is to link primary and secondary prevention cancer control programs with patient services access, research and assessment, education and information, and technical assistance for providers, coalitions, and individuals by managing primary and secondary prevention cancer control programs. BCC will direct collaborative efforts, both within and outside of DOH, to better utilize available funding, furnish education, provide access to and funding for services, collect and analyze data, and foster policy development to reduce cancer-related disease and death in Missouri. ●

Cancer Control Coalitions



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1. Northwest Cancer Control Coalition
2. Northeast Cancer Control Coalition
3. Kansas City Area Cancer Control Coalition
4. North Central Cancer Control Coalition
5. St. Louis Area Cancer Control Coalition
6. Southwest Cancer Control Coalition
7. South Central Cancer Control Coalition
8. Southeast Cancer Control Coalition

*For names and addresses of the current chairs of the coalitions and those of the current
Cancer Control Advisory Board members, contact the Bureau of Cancer Control —
(573) 522-2841.*

..... A l l i e d A g e n c i e s

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Bureau of Cancer Control
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1-800/ 316-0935
(573) 522-2845
fax (573) 522-2899
cowans@mail.health.state.mo.us



AGENCY for TOXIC SUBSTANCES
and DISEASE REGISTRY
500 State Avenue
Robert Dole Federal Bldg
Kansas City, KS 66101
(913) 551-1313
fax (913) 551-7063



AMERICAN ALLIANCE OF CANCER
PAIN INITIATIVES
1300 University Avenue, Room 4720
Madison, WI 53706
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fax (608) 265-4014
aacpi@aacpi.org
www.aacpi.org



AMERICAN LUNG ASSOCIATION(ALA)
www.lungusa.org
800-LUNG USA

ALA of Eastern Missouri
1118 Hampton Avenue
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(314) 645-5505
fax (314) 645-7128
ncrownover@alaem.org

ALA of Western Missouri
2007 Broadway
Kansas City, MO 64108-2080
(816) 842-5242
fax (816) 842-5470

ALA Springfield Office
2053-D South Waverly
Springfield, MO 65804
(417) 883-7177
fax (417) 883-7026

BLACK HEALTH CARE
COALITION
6536 Troost Avenue
Kansas City, MO 64131
(816) 444-9600
fax (816) 444-9668
BHCC85@swbell.net

BREAST & CERVICAL HEALTH
AWARENESS COALITION OF KANSAS CITY
C/O Toni Roven, R.N.
Truman Medical Center Lakewood
Outreach Clinics
7900 Lee's Summit Road
Kansas City, MO 64139
(816) 373-4485; ext. 4005



CANCER ACTION, INC.
1831 Minnesota Avenue
Kansas City, KS 66102
(913) 321-8880
fax (913) 321-4033
canact@unicom.net

CANCER CARE, INC.
275 Seventh Avenue
New York, NY 10001
1-800/813-HOPE
www.cancercare.org



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CANCER INFORMATION SERVICE
Heartland Region
c/o Kansas Cancer Institute
3901 Rainbow Boulevard
Kansas City, KS 66160-7312
1-800-4-CANCER
www.cis.nci.nih.gov

COALITION OF HISPANIC WOMEN
AGAINST CANCER
Coalición de Mujeres Hispanas
Contra el Cáncer
36 South Boeke
Kansas City, KS 66103
(913) 588-4738
fax (913) 588-4701
xsomoza@kumc.edu



MID-MISSOURI PARTNERSHIP FOR
BREAST CANCER AWARENESS
PMB 278, 201 West Broadway
Columbia, MO 65203
(573) 815-6079
fax (573) 815-6423

MISSOURI CANCER PAIN
INITIATIVE
c/o Ellis Fischel Cancer Center
Patient and Family Services
115 Business Loop 70 West
Columbia, MO 65203
(573) 882-7373
fax (573) 882-4560
caldwellta@missouri.edu

MISSOURI PATIENT CARE REVIEW
FOUNDATION
3425 Constitution Court, Suite E
Jefferson City, MO 65102
(573) 893-7900
fax (573) 893-5827

NATIVE AMERICAN HEALTH
COALITION
6025 Prospect, Suite 103
Kansas City, MO 64132
(816) 333-7500
fax (816) 333-7880
nahe@kc.com

R. A. BLOCH CANCER
FOUNDATION, INC.
4435 Main Street, Suite 500
Kansas City, MO 64111
1-800-433-0464
816-WE BUILD (932-8453)
fax (816) 931-7486
www.blochcancer.org

STL PARTNERSHIP FOR BREAST &
CERVICAL CANCER AWARENESS
c/o Cora Bozeman, R.N.
St. Louis City Department of Health
634 N. Grand, Rm 533
St. Louis, MO 63103
(314) 612-5400
fax (314) 612-5410
cbozeman@stlouisacity.com

TRI-STATE WOMEN'S HEALTH
COALITION
2700 McClelland Blvd.
Bld. B, Suite 201
Joplin, MO 64804
(417) 624-6808
fax (417) 782-2348

U.S. CENTERS FOR DISEASE
CONTROL & PREVENTION
National Center for Chronic Disease
Prevention and Health Promotion
Division of Cancer Prevention & Control
4770 Burford Hwy NE, MS K-64
Atlanta, GA 30341-3717
(888) 842-6355
fax (770) 488-4760
www.cdc.gov/cancer
cancerinfo@cdc.gov



U.S. ENVIRONMENTAL PROTECTION
AGENCY
SunWise School Program (skin cancer)
401 M Street, SW
Mail Code 6205J
Washington, D.C. 20460
(202) 564-2261
fax (202) 565-2156
www.epa.gov/sunwise
rutsch.linda@epa.gov



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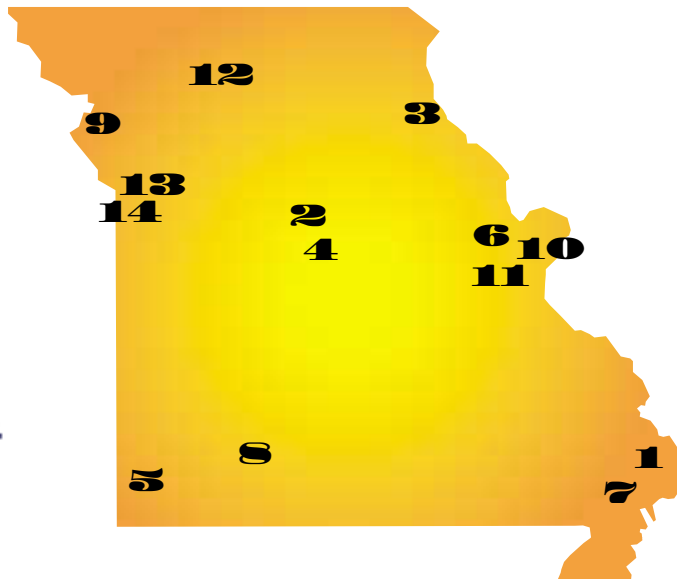
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PRO**

Committed to positive change
in health care quality

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1-800-ACS-2345
WWW.cancer.org



American Cancer Society Offices in Missouri

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*Cancer
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Control
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F A Q S —

Frequently Asked Questions About Cancer

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Q: What is meant by risk factor?

A: A risk factor is any cause or element that has been associated with an increased chance of getting a disease. It is not necessarily a direct cause of the disease. For cancer, risk factors include personal risks (e.g., family history of cancer, diet and many others), as well as exposure to cancer causing agents (e.g., smoking, sunlight, certain chemicals, etc.).

Q: What is meant by “age adjusted”?

A: This process allows comparison of a cancer rate in one community with that in another. This is important because cancer occurs at different rates in different age groups. To understand it, think of a retirement community that is home to many senior citizens. Then, think of a community known for its good schools that would attract families with children. We would expect the first community to have a higher rate of cancer because cancer occurs more often in older people. But even a small number of cancer cases in the community with younger people might be more than we would expect. To compare the number of new cancer cases in both communities, we must first adjust the rates for age.

Q: Am I more at risk if my county’s cancer rate is high?

A: If you live or lived in a county where the incidence or mortality rates of cancer are higher than the state rate, it does not mean that you are more likely to develop cancer than someone who lives in a county with a lower rate. Your risk depends on many things including your lifestyle (smoking, diet), your family history and contact you have with cancer causing substances (sunlight, x-rays, tobacco smoke, some chemicals).

Q: If my county’s rate is high, is the environment to blame?

A: A map cannot prove that something in the environment causes cancer. Cancers develop slowly in people. They usually appear anywhere from 5 – 40 years after exposure to a cancer-causing agent. This is called the latency period. This is one of the reasons it is difficult to determine what causes cancer in humans. Also, people relocate, which makes it hard to link exposure to a cancer causing agent to where a person lives.

Q: Will comparing these maps to maps of risk factors show me what is causing cancer in my community?

A: No, because the presence of a cancer-causing substance doesn’t tell us whether people were exposed to it. If there’s no exposure, there’s no increased cancer risk. Also, the only risk factor data that is available for us to map is quite recent and it usually takes a long time for cancer to develop after someone is exposed.

To understand this better, assume that a county has a higher than average lung cancer rate. Since we know for certain that smoking is the main cause of lung cancer, if we were to map tobacco use, would we be likely to find that the county has a high rate of lung cancer? Maybe so, but since lung cancer has a long latency period, there’s no connection between the two pieces of information. The cancer cases are related to smoking twenty or thirty years ago, but we don’t know where the people lived then and we don’t have tobacco use data for that time period. The current smoking pattern is not a factor for current cancer incidence but may serve as an indicator for potential cancer incidence twenty or thirty years in the future.

Remember, too, that cancer is not a single disease but hundreds of different diseases. What changes a lung cell into lung cancer isn’t the same as what changes a breast cell into breast cancer, or a blood cell into leukemia. Maps can do many things: show us the patterns for cancer in the state, help health officials to plan services and even suggest ideas for research, but they can’t tell us what causes cancer.

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*Cancer
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in Missouri*

***If you
would like to be
involved in cancer
control and
prevention but the
perforated card***



***from this page has
already been used,
you may contact us
for further
information:***

Missouri Department of Health
Bureau of Cancer Control
P.O. Box 570
Jefferson City, MO
65102-0570

YES! Tell me how I can be involved in cancer control and prevention.

I want to become involved through:

coalitions ☐ community groups ☐ support groups ☐
health fairs ☐ health care settings ☐ media activities ☐
worksites ☐ other (specify) _____

I got this card at the following location:

doctor's office ☐ library ☐ hospital ☐
clinic ☐ worksite ☐ health department ☐
coalition meeting ☐ other (specify) _____

Name _____

Street Address _____

City, State, Zip _____

Organization (if applicable) _____

phone (_____) _____

e-mail _____

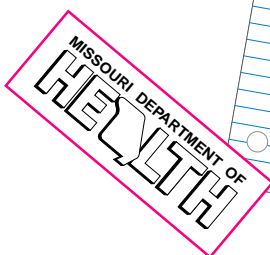
The Cold Facts

Cancer is the most curable of all chronic diseases.

Tobacco, not environmental pollution, is the leading cause of death from cancer.

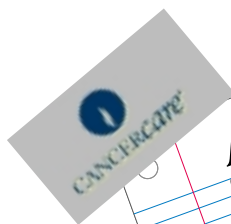
Many cancers are preventable.

Diets low in animal fats and high in fruits and vegetables greatly reduce risk of colorectal cancer.



Most cancer takes 20 to 30 years to develop.

Death rates from cancer can be decreased by changing lifestyle and by early detection.



After heart disease, cancer is the 2nd leading cause of death in the nation and in Missouri.

Prostate cancer occurs at twice the rate in African-American men as it does in white men.

An increased number of sexual partners increases the risk for cervical cancer.



place stamp here



More Missouri women die from lung cancer than from breast cancer.

More than 95% of skin cancers can be successfully treated.

Missouri Department of Health
Bureau of Cancer Control
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